

20. The power converter of claim 19, wherein the input voltage system includes,  
an external AC source to provide the one of the plurality of input voltages,  
a voltage rectifying system to receive the one of the plurality of input voltages and to  
output a rectified input voltage,

5 a driver to supply a driving signal with a duty cycle, and  
a switching device to receive the rectified input voltage and the driving signal, to utilize  
the duty cycle of the driving signal to turn on and off the switching device to produce a switched  
voltage that is input to the transformer.

21. A power converter, comprising:

10 an input voltage system to receive a plurality of input voltages and to output a single  
voltage;

a transformer to receive the single voltage from the input voltage system and to output a  
transformed voltage, said transformer having a primary winding and a secondary winding; and

a rectifying circuit to receive the transformed voltage, to rectify the transformed voltage,  
15 and to output a DC voltage,

wherein the secondary winding has a center tap to which one of the plurality of input  
voltages is provided.

22. The power converter of claim 21, wherein the plurality of input voltages is input  
one at a time.

20 23. The power converter of claim 21 wherein the plurality of input voltages is input  
simultaneously.

24. The power converter of claim 21, further including a buck regulator to receive the DC voltage, to generate a regulated voltage, and to output the regulated voltage as an output voltage.

25. The power converter of claim 24, further including a voltage error system to receive a programming voltage and the regulated voltage, and to output a voltage correction signal to the buck regulator based on the ratio between the programming voltage and the regulated voltage.

26. The power converter of claim 25, wherein a magnitude of the programming voltage is dependent upon a value of a resistor located in a cable coupled to the power converter.

27. The power converter of claim 25, wherein a magnitude of the programming voltage is dependent upon a value of a resistor located in a connector coupled to a cable and the power converter.

28. The power converter of claim 27, wherein the connector is detachable from the cable.

29. The power converter of claim 25, wherein the programming voltage is transmitted from a connector coupled to a cable and to the power converter.

30. The power converter of claim 29, wherein the connector is detachable from the cable.

31. The power converter of claim 24, further including an error correction system to receive a programming current and a regulated current, and to output a correction signal to the buck regulator based on a ratio between the programming current and the regulated current.

32. The power converter of claim 31, wherein a magnitude of the programming current is dependent upon a value of a resistor located in a cable attached to the power converter.

33. The power converter of claim 32, wherein a magnitude of the programming current is dependent upon a value of a resistor located in a connector coupled to a cable and the power converter.

34. The power converter of claim 33, wherein the connector is detachable from the  
5 cable.

35. The power converter of claim 32, wherein the programming current is transmitted from a connector coupled to a cable and to the power converter.

36. The power converter of claim 33, wherein the connector is detachable from the  
cable.

10 37. A power system for a portable appliance, comprising:  
a power supply including

a voltage system to receive a plurality of input voltages and to output a single  
voltage,

a transformer, coupled to the voltage system, to receive the single voltage and to  
15 output a transformed voltage, said transformer including a primary winding and a secondary  
winding, wherein said secondary winding of said transformer is configured as a boost inductor,  
and

a buck regulator to receive the transformed voltage, to generate a regulated  
voltage, and to output the regulated voltage as an output voltage and/or a regulated current as the  
20 output current; and

a cable coupled to the power supply to receive the output voltage and the output current.

38. The power system of claim 37, wherein the cable includes a resistor having a  
value which at least in part determines a value of a programming signal that is input to an error

correction system in the power supply, and the error correction system generates a correction signal if a regulated signal to programming signal ratio is outside an acceptable range.

39. The power system of claim 38, wherein the programming signal is one of a voltage programming signal and a current programming signal, and the regulated signal is one of the regulated voltage and the regulated current.

40. The power system of claim 37, further including a connector coupled to the cable, wherein the connector includes a resistor having a value which at least in part determines a value of a programming signal that is input to an error correction system in the power supply, and the error correction system generates a correction signal if one output signal to programming signal ratio is outside an acceptable range.

41. The power system of claim 40, wherein the connector is detachable from the cable.

42. A power system for a portable appliance, comprising:

a power supply including

a voltage system to receive a plurality of input voltages and to output a single voltage,

a transformer, coupled to the voltage system, to receive the single voltage and to output a transformed voltage, said transformer having a primary winding and a secondary winding;

a rectifying circuit to receive the transformed voltage, to rectify the transformed voltage, and to output a DC voltage,

wherein the secondary winding has a center tap to which one of the plurality of input voltages is provided, and

a buck regulator to receive the DC voltage, to generate a regulated voltage, and to output the regulated voltage as an output voltage and a regulated current as an output current, and

a cable coupled to the power supply to receive the output voltage and the output current.

5        43.     The power system of claim 42, wherein the cable includes a resistor having a value which at least in part determines a value of a programming signal that is input to an error correction system in the power supply, and the error correction system generates a correction signal that is transmitted to the buck regulator if one output signal to programming signal ratio is outside an acceptable range.

10       44.     The power system of claim 43, wherein the programming signal is one of a voltage programming signal and a current programming signal, and the one output signal is one of the regulated voltage and the regulated current.

15       45.     The power system of claim 42, further including a connector coupled to the cable, wherein the connector includes a resistor having a value which at least in part determine a value of a programming signal that is input to an error correction system in the power supply, and the error correction system generates a correction signal and transmits the correction signal to the buck regulator if one output signal to programming signal ratio is outside an acceptable range.

46.     The power system of claim 45, wherein the connector is detachable from the cable.

20       47.     A method to output a regulated voltage and a regulated current, comprising:  
receiving a plurality of input voltages; and outputting therefrom a single voltage;  
receiving the single voltage at a transformer; and

outputting a transformed voltage, wherein a secondary winding of the transformer is configured as a boost inductor.

48. The method of claim 47, further including receiving the transformed voltage at a buck regulator;

creating a regulated voltage at the buck regulator; and

outputting the regulated voltage and a regulated current as an output voltage and an

5 output current.

49. The method of claim 48, further including receiving a programming signal at an error correction system;

receiving regulated signals at the error correction subsystem;

comparing the programming signal with one of the regulated signals to determine if the

10 one of the regulated signals to programming signal ratio is within an acceptable range; and

outputting a correction signal if the one of the regulated signals to programming signal ratio is outside the acceptable range.

50. The method of claim 49, wherein the programming signal is a voltage programming signal and the one of the regulated signals is a regulated voltage.

15 51. The method of claim 49, wherein the programming signal is a current programming signal and the one of the regulated signals is a regulated current.

52. A method to output a regulated voltage and a regulated current, comprising:

receiving a plurality of input voltages and outputting therefrom a single voltage;

receiving the single voltage at a transformer;

20 providing one of the plurality of input voltages at a center tap of a secondary winding of the transformer;

outputting a transformed voltage;

receiving the transformed voltage at a rectifier; and

outputting a DC voltage.

53. The method of claim 52, further including receiving the DC voltage at a buck regulator;

creating a regulated voltage at the buck regulator; and

5 outputting the regulated voltage and a regulated current as an output voltage and an output current.

54. The method of claim 53, further including receiving a programming signal at an error correction system;

receiving regulated signals at the error correction system;

10 comparing the programming signal with one of the regulated signals to determine if the one of the regulated signals to programming signal ratio is within an acceptable range; and

outputting a correction signal if the one of the regulated signals to programming signal ratio is outside the acceptable range.

55. The method of claim 54, wherein the programming signal is a voltage  
15 programming signal and the one of the regulated signals is a regulated voltage.

56. The method of claim 54, wherein the programming signal is a current programming signal and the one of the regulated signals is a regulated current.